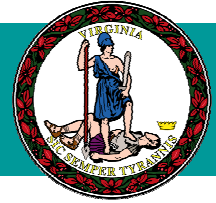# Commonwealth of Virginia's Communications Interoperability

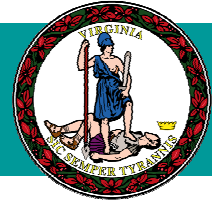**Understanding Mutual Aid and Interoperability Channels Statewide**

OCT 3, 2006

# Panelists

- *Jim Sobecke, Mutual Aid & Interoperability IAT Co-Lead*

- *Charlie Hoffman, NTIA/Public Safety Division*

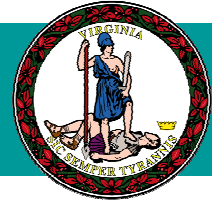- *Don Bowers, Capt., Fairfax County Fire and Rescue*

# Agenda

- Background
- FY 2006 Activities
- FY 2007 Activities
- Interoperability
- Federal Interoperability Perspective
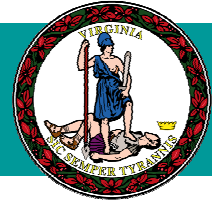- Interoperability Channels & Operability
- Questions and Discussion

# Jim Sobecke

## Mutual Aid Channel Initiative Action Team
## Co-Lead

**jsobecke@gwu.edu**
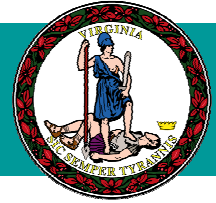**703-284-8113**
**703-887-1421**

# Interoperability

- **Approaches to interoperability**
  - Disparate radio systems
  - Multiple solution sets
  - New and competing technologies
- **Obsolescence versus funding**
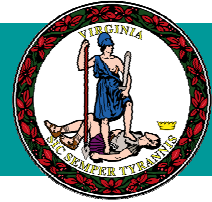- **Planning, procedures and training**
- **Human factor**

- "**Mutual Aid Channel**" usually applies to an agreement between and among adjoining jurisdictions to share a common channel for 'operability' when crossing into another's jurisdiction.

- "**Interoperability Channels**" are designated specifically for coordination and communications between responders without a geographic restriction (i.e., statewide or nationwide).
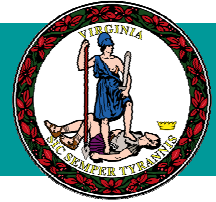
# Situation

- "**Mutual Aid Channels**" may not be recognized in other parts of the state or neighboring counties for general interoperability, and in fact may be used for dispatch or other purposes.

- "**Interoperability Channels**" are for emergency use only - not to be used on a day-to-day basis or for administrative purposes.
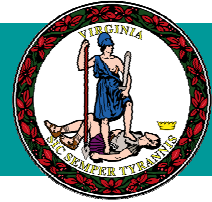
**Initiative Action Team (IAT) 6**

Chartered to address Initiative 6 of the FY 2006 Strategic Plan:

*"Promote the use of local, regional, state, and federal mutual aid channels to foster interoperable communications."*
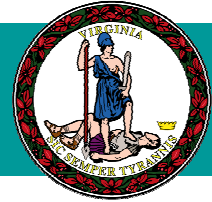
## IAT - 6 Methodology:

- Developed a Mutual Aid Channel Database

- Organized data collection methodology to coincide with the 7 Commonwealth regions recognized by the Governor

- Email contact was made with all of the 7 Regional PSAP Managers to solicit their support in this effort
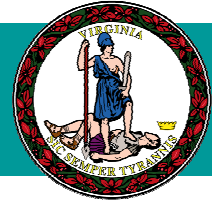
## IAT- 6  Recommendations:

- (Initiative 10) Endorse and promote the use of nationally recognized interoperability channels in the VHF, UHF and 800 MHz bands;

- Complete the data gathering effort;

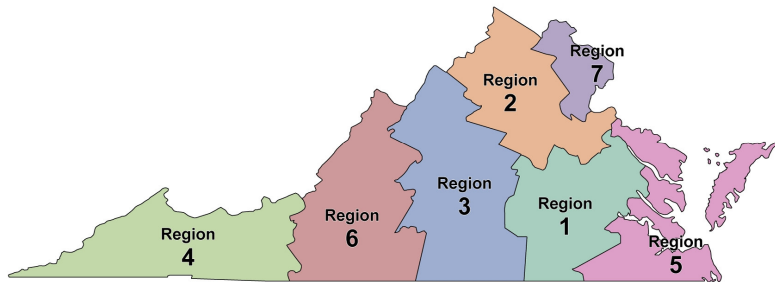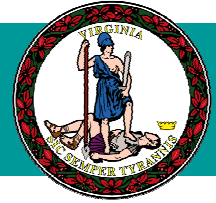- Develop interoperability implementation guidelines

## IAT- 6  Objectives

- Continue data gathering efforts

- Request regional facilitators and team members

- Re-look at CASM as a data source

- Develop an approach for implementing statewide interoperability
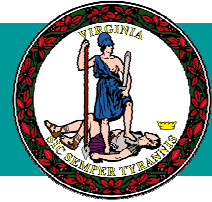
- Proposal presentation  (May 2007)

**Statewide Interoperability Implementation Planning**
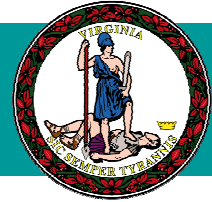
# Commonwealth Interoperability

- ## Challenges to interoperability

  - Disparate radio systems

  - Multiple solution sets

  - New and competing technologies

- ## Obsolescence versus funding

- ## Planning, procedures and training

- ## Human factor

EXAMPLE

MUTUAL AID – an agreement between (local) jurisdictions for the sharing of resources – day-to-day basis; preplanning

| PMARS | SIRS | EMS MA (155.205) |

INTEROPERABILITY – a set of standards invoking commonality in operations - having wide application (statewide, regional, national)
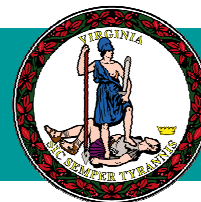
| 1CAL18 | 4TAC32 | 8TAC93 |

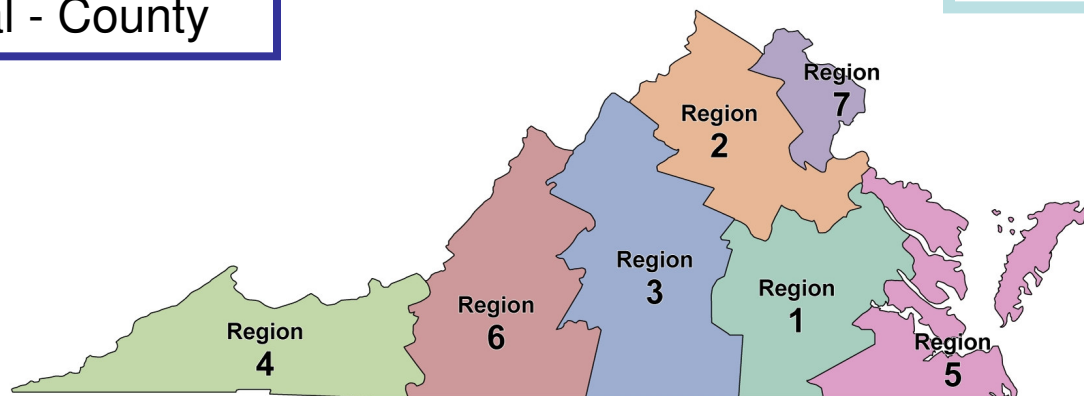# Commonwealth Interoperability

**Law Enforcement**
SIRS
STARS
NLEC
Local - County

**FIRE**
VHF Mutual-Aid
Channels

**EMS**
HEARS
MED COM

Region 7

Region 2

Region 3

Region 1

Region 6

Region 4

Region 5
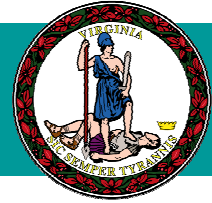
Regional 800 MHz Trunked Systems

VDEM S&R

# Interoperability Channel Designations
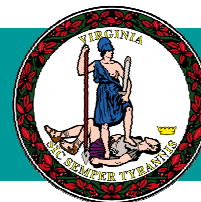
NCC recommendation to the FCC

NPSTC continues the effort

Gaining support across the country

## NCC Interoperability Channel Designations

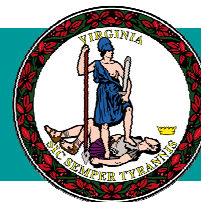| SUFFIX |
| :---: |
| D=DIRECT |
| (TALK-AROUND) |

| N | A |
| :---: | :---: |

**BAND**

| A | A | A |
| :---: | :---: | :---: |

**FUNCTION**

| N | N | N |
| :---: | :---: | :---: |

UNIQUE

**CHANNEL NUMBER**

| D |
| :---: |

# Commonwealth Interoperability

## NCC Interoperability Channel Designations

N A A A A N N N D

U H F
27 - 30

VHF-HI
5 - 26

VHF-LO
1 - 4

31 - 34

FED VHF LAW
35 - 39

FED VHF INCIDENT
40 - 44

UNIQUE
CHANNEL
NUMBER

FED UHF LAW
45 - 51

FED UHF INCIDENT
52 - 57

800 MHz
90 - 94

700 MHz
58 - 89
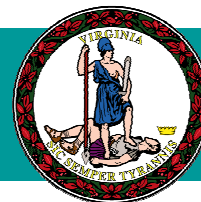
2006
Virginia
Interoperability
Communications
Conference

## NCC Interoperability Channel Designations

| N | A | A | A | A | N | N | N | D |
|---|---|---|---|---|---|---|---|---|

**UNIQUE CHANNEL NUMBER**

**CHANNEL DESIGNATORS**

**100 – 999**

**FEMA Regions**

# Commonwealth Interoperability



**900 - 999**

AK, AZ, CA, HI, ID, NV, OR, WA, Pacific Trust

**800 - 899**

CO, MT, ND, SD, UT, WY

**700 - 799**

IA, KS, MO, NE

**600 - 699**

AR, LA, NM, OK, TX

**500 - 599**

IL, IN, MI, MN, OH, WI

**100 - 199**

CT, ME, MA, NH, RI , VT

**200 - 299**

NJ, NY, PR, VI

**300 - 399**

DE, DC, MD, PA, VA, WV

**400 - 499**

AL, FL, GA, KY, MS, NC, SC, TN
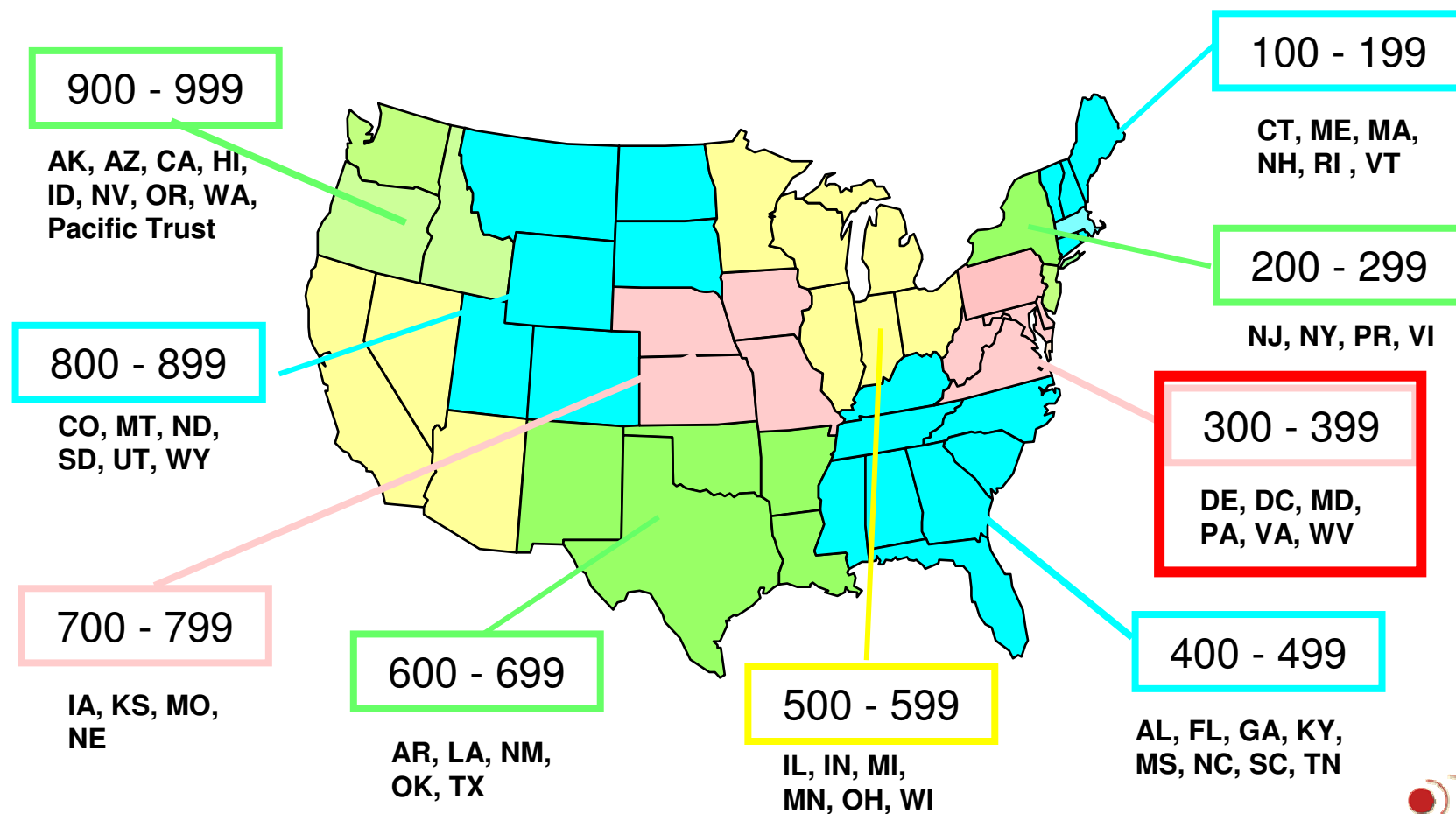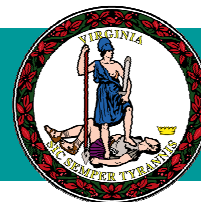
# Commonwealth Interoperability

**FEMA REGION III**

300 - 399
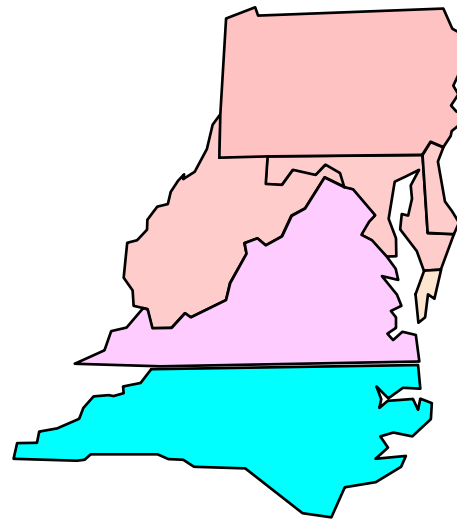


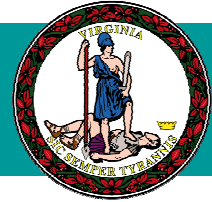| | |
|---|---|
| DE | |
| DC | |
| MD | |
| PA | |
| **VA** | 3NN – 3NN |
| WV | |

NC  4xx – 4xx

# Commonwealth Interoperability

## Implementation Issues

800 MHz NPSPAC National Calling & Tactical Channels
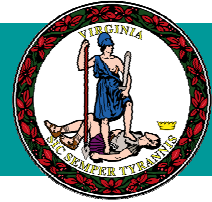
STARS - COMLINC role with Interoperability Channels

NCC Common Channel Designation

- VA SIEC endorsement

- Virginia Interoperability Channels (3xx)

Implementation Plan - Guidelines

## Statewide Agencies Radio System (STARS)

Is SIRS still a viable *statewide* channel for *interoperability* ?

Should each VSP District Dispatcher monitor interoperability **calling** channels?

**8CAL90**　　　　**1CAL18**　　　　**4CAL31**

Should each VSP District Dispatcher have access to and control (repeater function) of **8TAC91** base stations?

Could COMLINC provide STAR users with direct access to designated Interoperability Channel located at strategic radio sites:
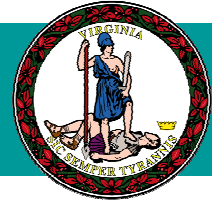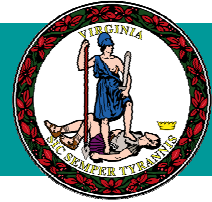
**8TAC92**　　　　**1TAC22**　　　　**4CAL32**

**Charlie Hoffman**

**NTIA
Emergency Planning
And Public Safety Division**

**choffman@ntia.doc.gov
202-482-3456**
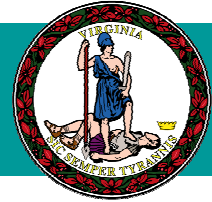
- **NTIA set aside 40 narrowband channels within the 162-174 MHz and 406.1-420 MHz bands for interoperable communications with Federal agencies for law enforcement (LE) and incident response (IR) operations.  These are to be used on a shared basis, with no exclusive use by any one agency.**
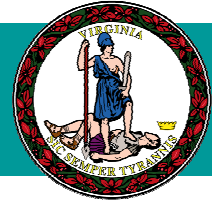
# Federal Interoperability

- **NTIA approved IRAC-recommended change to NTIA policy for more streamlined use of I/O channels:**
  - Eliminated need for Federal written certification.
  - Available for use among Federal agencies and between Federal agencies and non-Federal entities with a requirement to interoperate.

- **Restrictions for Use**
  - Not authorized for routine or administrative uses.
  - Only narrowband emissions are to be used on Federal I/O channels.
  - Subject to condition that harmful interference will not be caused to Federal stations.

# Federal Interoperability

- **NTIA working with FCC to determine non-Federal rules for use**.

- **Coordination:**
  - **Major events** (i.e., hurricane, earthquake, terrorist, etc.)
    - Coordination through ESF#2 Frequency Management Cell
    - Joint Field Office Communications Chief if ESF#2 not activated.
  - **Routine Interoperability** (i.e., joint HAZMAT spill, joint law enforcement event, etc.)
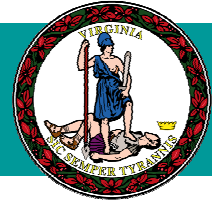    - Coordination between Federal agency and non-Federal entities.
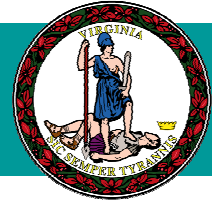
## Proposed Additional Changes

- **Special Temporary Authorizations -** Not required if incident lasts less than 7 days.

- **Programming of Radios -** Working with FCC to allow this on non-Fed radios.

- **Training -** Routine training using I/O channels recommended and encouraged.

- **New Channels -** Channel plan in VHF band requires identification of new I/O channels.

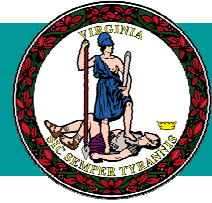- **Reciprocity –** Non-federal offer of I/O channels

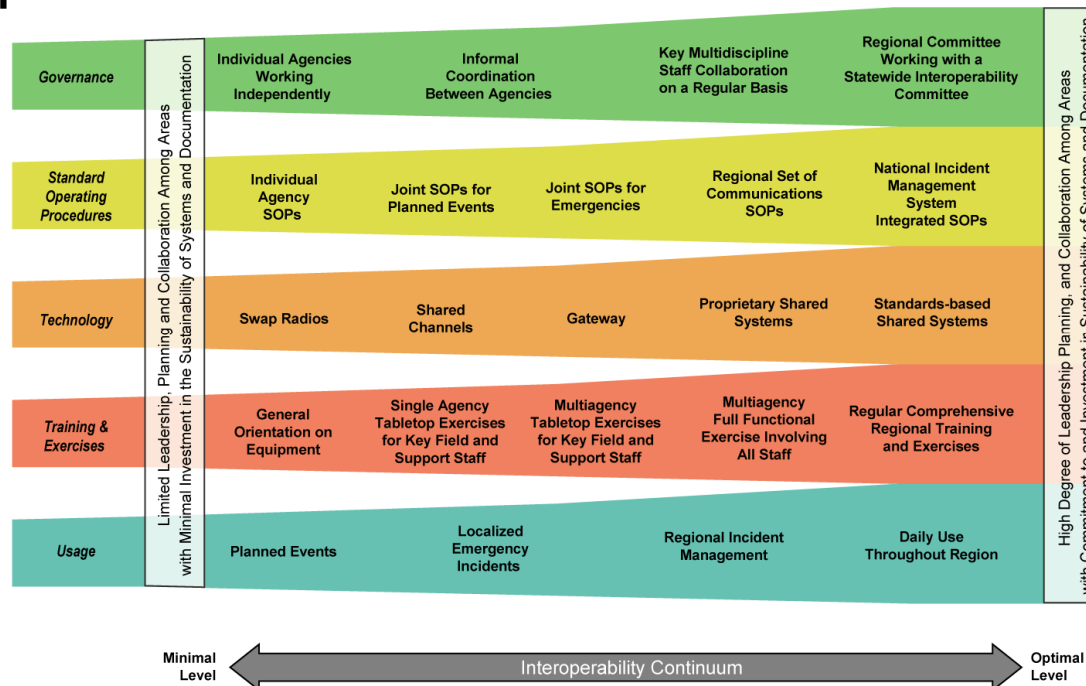**Don Bowers, Captain**

**Fairfax County Fire & Rescue**
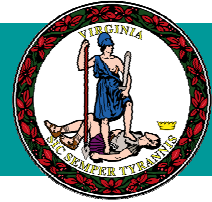
Donald.bowers@fairfaxcounty.gov
703-280-0634

2006
Virginia
Interoperability
Communications
Conference

# Interoperability Channels & Operability

- Free Resources
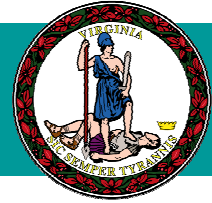- Shared Channels on the Interoperability Continuum

- **Shared Channels (SAFECOM)**
- Interoperability is promoted when agencies share a common frequency band, air interface (analog or digital), and are able to agree on common channels. However, the general frequency congestion that exists across the United States can place severe restrictions on the number of independent interoperability talk paths available in some bands.
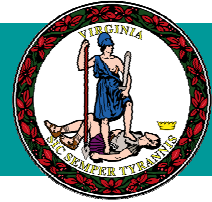
# Interoperability Channels & Operability

- Most interoperability efforts are planned and achieved regionally
  - Interoperability Channels may fit a niche in your locality
  - In-Band tactical channels when limited frequencies are available
    - Multiple jurisdictions with one or two channels each
    - Combined with cross-band patch for multi-band interoperability

- **Interoperability channels are of significant value when resources are required from outside of the region**
  - Incident Command establishes Staging area with Cross-band patched Interoperability tactical channel
  - All public safety responders maintain interoperability channels in radios
  - Result = All inbound responders achieve communications with Staging, once within range of site
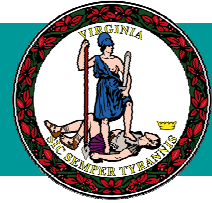
# Interoperability Channels & Operability
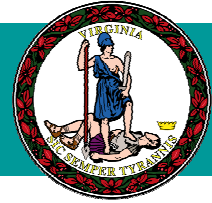
- **Enhanced Utilization of Interoperability Channels**

- **Tactical repeaters**
  - Extended local area coverage for incident scene

- **Fixed Site Infrastructure**
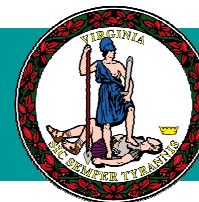  - Wide-area coverage for established geographic region

- **Operational Challenge**
  - Determine Frequency Availability
    - Identify state-wide channels
    - Identify regional channels
  - Program Radios with In-Band Channels
  - Communications Plan
  - Integrate Cross-band patches and repeaters if warranted by incident needs

# Comments?

# DISCUSSION
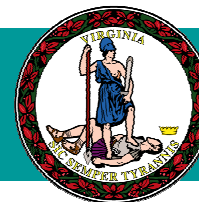
# Our Allotted Time is up

# Thank you

- **Don Bowers**: *Don.Bowers@fairfaxcounty.gov*
- **Charlie Hoffman**: *CHoffman@ntia.doc.gov*
- **Jim Sobecke**: *jsobecke@gwu.edu*